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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,696	06/27/2003	Gerhard Beckmann	107044-0036	7715

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EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT PAPER NUMBER

1746

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,696	<b>Applicant(s)</b> BECKMANN ET AL.	
	<b>Examiner</b> Tony Chuo	<b>Art Unit</b> 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 2-6 and 11-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/7/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, Species ii, Claims 7-10 in the reply filed on 1/3/06 is acknowledged. Upon further consideration, claim 1 is a generic claim so it will be included in this examination.

Claims 2-6 and 11-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Groups I, Species i, II, III, IV, and V, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/3/06.

### ***Specification***

2. The abstract of the disclosure is objected to because it exceeds the 150 word limit. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7, 8, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeFilippis et al (US 2003/0215686) in view of Barber (US 6443717).

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Regarding claim 1, the DeFilippis reference teach a direct oxidation fuel cell "17", an anode chamber "19", and a cathode chamber "21" (See Figure 2). However, the reference does not expressly teach a fluid controlling assembly comprising an adjustable component at least a portion of is disposed within the cathode chamber and when adjusted, regulates the rate at which fluids travel into and out of the cathode chamber. The Barber reference does teach a mechanism for controlling mass flow in fuel cell systems comprising an adjustable component "10" that regulates the rate at which oxygen flows into and out of the cathode chamber of the fuel cell (See Figure 1-3 and column 3, lines 26-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DeFilippis fuel cell to include the adjustable component in the cathode chamber so that minute adjustments to the air system can be made to compensate for undesirable changes in the efficiency of the fluid supply apparatus.

Regarding claims 7 and 8, the DeFilippis reference teach a direct oxidation fuel cell "17", an anode chamber "19", and a cathode chamber "21" (See Figure 2). However, the reference does not expressly teach a fluid controlling assembly comprising a first component that includes an aperture in the cathode chamber, a corresponding second component such that placement of the first component relative to the second component results in either permitting the flow of fluids into the cathode chamber when open or restricting the flow of fluids when closed. The Barber reference does teach a mechanism for controlling mass flow in fuel cell systems comprising a first component represented by the stationary cylinder head "9" that includes fixed openings

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and a corresponding second component represented by the rotating disc "10" such that the placement of the first component relative to the second component either permits the flow of oxygen into the cathode chamber when open or restricts the flow of oxygen when closed. In addition, the first and second components are generally planar components that include corresponding apertures which when aligned create openings and can be adjusted relative to one another to control the rate of fluid flow through the openings (See Figure 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DeFilippis fuel cell to include a first and second planar components that either permits the flow of oxygen when open or restricts the flow of oxygen when closed into the cathode chamber so that minute adjustments to the air system can be made to compensate for undesirable changes in the efficiency of the fluid supply apparatus.

Regarding claim 10, the DeFilippis reference in view of the Barber reference is applied to claims 7 and 8 for reasons stated above. However, the DeFilippis reference does not expressly teach a control system for variably actuating the position of at least one of the first and second components of the fluid controlling assembly. The Barber reference does teach a control system "711" for variably actuating the position of the rotating disc "10" of the fluid controlling assembly (See Figure 3 and 7, column 7, lines 40-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DeFilippis fuel cell to include a control system in order to maintain stringent power output requirements for vehicular applications.

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5. Claim 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber (US 6443717) in view of DeFilippis et al (US 2003/0215686). The Barber reference teaches a mechanism for controlling mass flow in fuel cell systems comprising a stationary cylinder head "9" that includes fixed openings and a corresponding rotating disc "10" such that the placement of the first component relative to the second component either permits the flow of oxygen into the cathode chamber when open or restricts the flow of oxygen when closed. In addition, the first and second components are generally planar components that include corresponding apertures which when aligned create openings and can be adjusted relative to one another to control the rate of fluid flow through the openings (See Figure 1-3). However, the Barber reference does not expressly teach a gas permeable, liquid impermeable film that controls the flow of oxygen and restricts the flow of liquid water such that humidity is maintained within the cathode chamber. The DeFilippis reference does teach a gas permeable, liquid impermeable membrane in the cathode chamber that controls the flow of oxygen and restricts the flow of liquid water (See paragraph [0045]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Barber fluid controlling assembly to line the first and second components with a gas permeable, liquid impermeable film in order to maintain the proper humidity within the cathode chamber.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

-rc 1/23/06

MICHAEL BARR  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Michael Barr', with a long horizontal flourish extending to the right.